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*Cathryn Terchief*  
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Date: *January 20, 2004*

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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of : Chip et al.  
For : **MODIFIED COPOLYMER LATEX BINDER**  
Serial No. : 09/993,745  
Filed : November 14, 2001  
Group Art Unit : 1771  
Examiner : Boyd, Jennifer A.  
Last Office Action : September 10, 2003  
Attorney Docket No. : OMNZ 200051  
Cleveland, Ohio 44114-2518

**RESPONSE**

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

The following is provided in response to the Office Action issued on September 10, 2003, in connection with the above-captioned application. Applicants respectfully request reconsideration of the application in light of the following comments.

### **THE OFFICE ACTION**

In the Office Action issued on September 10, 2003, the Examiner rejected claims 1-10 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,539,254 to O'Connor et al. ("O'Connor")

### **REMARKS**

Applicants have carefully considered the Office Action issued on September 10, 2003. Applicants respectfully request reconsideration of the application in light of the following comments.

#### **A. The Pending Claims Are Not Obvious Over O'Connor**

The Examiner rejected claims 1-10 under 35 U.S.C. §103(a) as being unpatentable over O'Connor. Applicants respectfully traverse for at least the following reasons.

First, with respect to claims 6-10, O'Connor fails to disclose or suggest a sheet comprising a **single layer** of polyester mat coated with the recited binder composition. As correctly recited by the Examiner, O'Connor discloses a reinforcing composite of at least one layer of fiberglass, one layer of polyester, and at least a third layer of fiberglass or polyester (col. 1, lines 59-64). Thus, O'Connor clearly relates to a **multi-layer** composite. The mere fact that the different layers are "bonded together by a thermoplastic adhesive under pressure to form a single, thin composite" (col. 2, lines 10-14) does not dispense with the fact that the "single composite" is, in fact, formed from and consists of at least three layers. In this respect, applicants would like to refer the Examiner to the common meaning of a "composite" which is defined as "being made up of distinct components". *Webster's II New College Dictionary* (1999). Thus, because O'Connor fails to disclose or suggest a sheet comprising a **single layer** of polyester mat, it fails to render the present claims unpatentable.

Second, and with respect to all of the claims, O'Connor fails to disclose or suggest the recited urea-formaldehyde/styrene-butadiene binder wherein the

urea-formaldehyde resin is prepared by adding a short-stop agent to the reaction system. In this respect, the Examiner has stated that "the preparation of the urea-formaldehyde resin by adding a 'short-stop' agent is not given any patentable weight. Since the applicant has not given any chain length limitations to the polymer, it is unclear how the short-stop agent would materially affect the product and differentiate it from any other urea-formaldehyde resin." Applicants respectfully disagree.

The present specification clearly states "[t]he polymerization of the urea-formaldehyde resin is terminated by adding the short-stop agent to the reaction system after a predetermined period of time. The resultant polymer is stabilized by removing its unstable terminal portions by hydrolysis or by blocking the unstable terminal portion by an esterification method, etc." (page 7, lines 20-24). Thus, contrary to the Examiner's arguments, applicants have clearly demonstrated how the short-stop agent affects the product and differentiates it from conventional urea-formaldehyde resins, i.e. by removing or blocking unstable terminal end portions of the polymer, which in turn results in a more stable product when mixed with a styrene-butadiene resin. The results of this short-stop agent addition are clearly demonstrated in Table 1, which shows that such urea-formaldehyde/styrene-butadiene resins have a longer stability than such blends made with conventional urea-formaldehyde resins when their pH is adjusted by a non-volatile alkaline agent such as TEA. Thus, because O'Connor fails to disclose or suggest a urea-formaldehyde resin modified with a short-stop agent, it fails to render the present claims unpatentable.

### **CONCLUSION**

In view of the foregoing comments, Applicants submit that claims 1-10 are in condition for allowance. Applicants respectfully request early notification of such allowance. Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned to attempt to resolve any such issues.

If any fee is due in conjunction with the filing of this response, Applicants authorize deduction of that fee from Deposit Account 06-0308.

Respectfully submitted,

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Date: 1-20-04

  
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